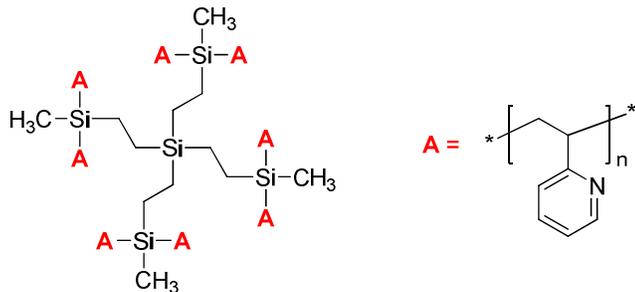


Sample name: **Eight arm Poly(2-vinyl pyridine)**

Sample #: **P11297-8-2VP**

Structure:



Composition:

Mn x 10 <sup>3</sup> (total):	53.0
Mn x 10 <sup>3</sup> (of each arm):	7.0
PDI:	1.09

Synthesis Procedure:

The eight arm-polymer was prepared by anionic living polymerization of 2VP in THF, and then the star polymer was obtained by coupling reaction with octachlorosilane derivative.

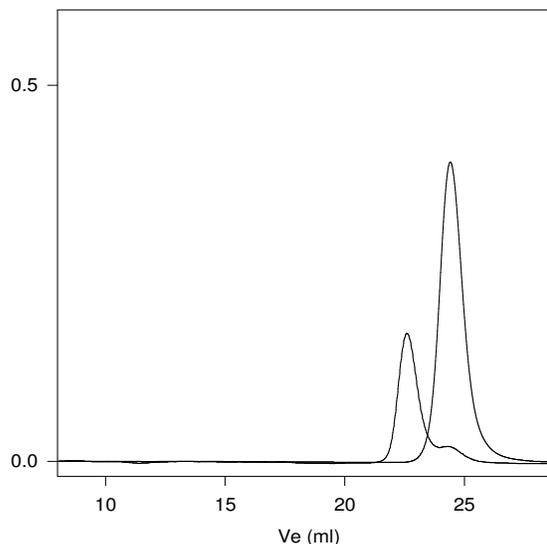
**Synthesis of the linking agent.** The linking agent was synthesized by reacting under nitrogen tetravinylsilane with an excess of dichloromethylsilane. The tetravinylsilane was added dropwise to the catalyst-chlorosilane solution which was maintained at 40°C. The catalyst consisted of 1g of H<sub>2</sub>PtCl<sub>6</sub>•6H<sub>2</sub>O in 9 ml of dimethoxyethane and 1 ml of ethanol. At the end of the reaction, the excess chlorosilane was removed at 60°C under reduced pressure. Distillation under reduced nitrogen pressure was then carried out to collect the linking agent, octafunctional chlorosilane. It was dissolved in purified cyclohexane, divided into several break-seal ampoules, and sealed under vacuum.

Characterization:

Molecular weight of the product was obtained by size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF as the eluent. The columns were calibrated with monodisperse poly 2 vinyl pyridine. The molecular weights and the polydispersity indice of the side-arm were calculated. The absolute molecular weight of the star-like polymer was determined by light scattering detector.

SEC elugram of the arm:

P11297-2VP.8



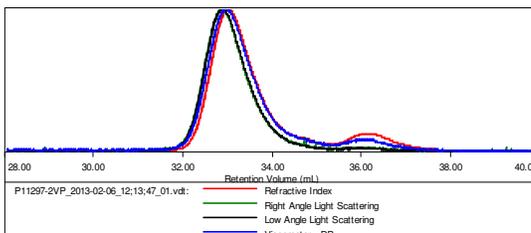
Size exclusion chromatography:

- Poly 2VP before linkage, M<sub>n</sub>=6,800, M<sub>w</sub>=7,400, PI=1.08
- 8-arm poly 2VP, Mn : of the final polymer: 53,000 Mw: 58,000

SEC elugram of the star polymer:

Sample ID: P11297-2VP

Concentration (mg/mL)	6.7163
Sample dn/dc (mL/g)	0.1670
Method File	PS80K-Feb-2013-0001.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11297-2VP_2013-02-06_12:13:47_01.	53,085	58,065	59,365	1.094	0.1566

